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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

10/52/486

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 51454 WO	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/IB2003/001775	International filing date (day/month/year) 07/05/2003	Priority date (day/month/year) 03/10/2002
International Patent Classification (IPC) or national classification and IPC G06F3/023, H04M1/274, G06F17/22		
Applicant NOKIA CORPORATION ET AL		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 3 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 05-04-2004	Date of completion of this report 16-12-2004
Address and mailing address of the IPEA/SE Patent och registreringsverket Box 3055 S-103 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Nabil Sebaa /LR Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/IB2003/001775

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1 - 26 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 1 - 3 _____ received by this Authority on 08/12/2004
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1 - 5 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. 17 _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/IB2003/001775

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-16</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-16</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-16</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The invention concerns mobile electronic phones having a reduced user input interface. It relates to a character input method or method for entering words into a user interface of a device, wherein the method uses the unequally distributed frequencies of words and numbers in a dictionary or a file to predict the most likely user input.

The problem to be solved by the invention relates to the slow and inconvenient process when entering words in a character keyboard of a mobile device. As commonly known, each button in a keyboard is related to several letters. When a user wants to enter a word, he/she is often obliged to push the same button several times to produce a letter of a complete word. The user thus experiences a slow process when using a keyboard in such manner, and would rather prefer a much faster and improved word entry method into an interface.

This International preliminary report on patentability is based on new claims 1-16 received by this authority on 08/12/2003.

The new claims 1-16 differ from originally filed claims 1-17 according to the following:

The new independent claims 1 and 15 have been clarified in that the present invention is directed to an electronic device such as a mobile phone, provided with a roller.

The new claims 1-14, and 16 are in verbatim the original claims 1-14., and 16 respectively.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

The original claim 17 has been deleted.

In addition, in the method claims the passage "which is made up of at least one character" of the step of generating a character subset has been deleted.

Thus, the new independent method claim 1 has been clarified in the feature of generating a subset, in that the character subset includes characters from among which, the next character for the word is most probably selected. It is therefore now clearly specified that the character subset comprises more than one character.

Reference is made to the following documents:

D1: GB 237 39 07 A

D2: US 639 26 40 B1

Document D1 describes a method for entering words and characters into mobile phones having a user input interface. The aim of D1 is similar to that of the claimed invention according to claims 1 and 15 in that, D1 also presents a method and device for improving word entries and increasing the speed in doing that.

According to D1, the method of entering words into the user interface is described, wherein characters of a word are selected from a character set stored in the device.

A predictive character algorithm is provided and the most likely character is presented first on the display as calculated from the statistical database. The prediction of a character is depended on a previously entered character by the user. As mentioned earlier, a database of words is also provided (see abstract, page 2, line 22 - page 4, line 11, and claims 1 and 8 in D1). An example of how to improve and increase the word input process is described in page 5, line 26 - page 7, line 10 in D1.

The electronic device of D1 is however not provided with a roller, and is strictly directed to 12-key ITU-T-keyboards or QWERTY-keyboards. In addition, a pre-selection input method is

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

required in D1, wherein a user in a first step pre-selects a certain key in the ITU-keypad, and is restricted to a fixed pre-selection input method. Furthermore, D1 does not allow any ambiguity when entering characters into the ITU-I keypad.

D2 discloses a method for entering words into an electronic device provided with a roller or thumb-wheel. D2 does however not disclose any prediction features and is also restricted to a pre-selective input method. In addition, the input sequence of D2 allows a T9 logic style ambiguity of the whole word.

In contrast, the invention claimed in new claims 1-16 discloses an input prediction method and an electronic device which does not necessarily requires an ITU-T-keypad for entering word; and is not restricted to a fixed pre-selection method of predetermined input characters.

Therefore, neither document D1 nor D2 taken alone or in combination could have given any suggestion to a person skilled in the art which would inspire him to the subject matter of the new claims 1-16 without involving an inventive activity.

Accordingly, the invention defined in new claims 1-16 is novel and is considered to involve an inventive step. The invention is industrially applicable.

Additional documents cited in the international search report:

D3: EP 639 26 40 B1

D4: GB 233 33 86 A

D5: EP 102 85 71 A1

The cited documents D3-D4 represent the general state of the art and the invention according to claims 1-16 is not disclosed by any of those documents.